Scientific Therapy and Practical Research

A Biography of Wm. F. Koch, Ph.D., M.D. (by The Koch Family)

During his lifetime, Dr. William F. Koch presented to the world medical community a new method for the treatment of cancer and its allied diseases based upon his research and studies of the body's natural immune system

One might ask, who was Dr. William F. Koch (1885-1967)?

Dr. William F. Koch[1] elected to attend the University of Michigan in 1905 where he studied chemistry under professor Moses Gomberg, Ph.D. (1866-1947), the father of the chemistry of free radicals. Dr. Koch received his B.A. in 1909, M.A. in 1910, and Ph.D. in 1916 from the University of Michigan. While in graduate school and attending medical school at the U. of M., he was an instructor in Histology, Physiology and Embryology. Also while at the U. of M., Dr. Koch was taught the principals of Homeopathic Medicine from Dr. A. W. Dewey, Professor of Materia Medica and Therapeutics, University of Michigan College of Homeopathy. Dr. Dewey wrote the following in 1926:[2]

Dr. Koch was a member of my family beginning in 1907. He lived with me during his collegiate years in the University of Michigan. He was in my home when he took his B.A., M.A., and Ph.D. degrees. He was with us when he served as instructor on Histology, Physiology and Embryology in the University.

My wife was a mother to him, my son a comrade and I was a sort of medical father to him, perhaps of the 'Poor Papa' kind. But in our affections he remains and always will remain a member of our family.

In 1914, he was appointed Professor of Physiology at the Detroit College of Medicine and subsequently became Chairman of that Department. While conducting his independent cancer research and at the same time teaching physiology and physiological chemistry at the Detroit College of Medicine, he completed his medical training and received his M.D. degree in 1918 from the Detroit College of Medicine.

Dr. Koch's medical research was from a physiologist's point of view. This research started ith his studies at the University of Michigan and it opened the door to his understanding of the basic causes of disease conditions and how the body fights off the toxic state caused by diseases. Through this research, Dr. Koch was able to develop his theories on how the chemistry of the natural immune system of the body worked. He then applied these theories in the treatment of different disease conditions by working with the body's natural immune system, not against it as so many medications and present day cancer treatments do.

Initially Dr. Koch's research interest focused on the function of the parathyroid glands. He wrote several papers on this subject concluding that the tetany, which followed the removal of the parathyroid glands, was not due to a disturbance of the calcium metabolism but instead resulted from an accumulation of certain toxic substances in the body. He also observed that the urine of the animals without parathyroid glands carried large amounts of lactic acid, which meant that the oxidation process was badly handicapped by the substances that were produced in the parathyroidectomized animals. These substances had blocked the normal tissue oxidation process. This turned out to be a momentous discovery, which paved the way for his original cancer research. By studying the tissues that survived the longest, he found out that the common feature was the presence of the di-carbonyl groups. This discovery led to a study of the tissue oxidation process and its relationship to cancer. Building on these discoveries, Dr. Koch began to study how the body's natural immune system functions in fighting off other disease conditions. As a result he developed his theories on the chemistry of natural immunity, a revolutionary approach to the understanding of human diseases.

Early Research Papers By Dr. Koch

The following provides a very short overview of the development of Dr. Koch's theories. Since he was a very thorough physiologist, the reader is invited to follow the evolution of this thinking and how his theories evolved from his original research on the parathyroidectomized animals.

His first research project at the University of Michigan was to investigate the functions of the parathyroid glands. While there he published three papers: 1) On The Occurrence Of Methyl Guanidine In The Urine Of Parathyroidectomized Animals, Journal Of Biological Chemistry, Vol. XII, No. 3 (1912); 2) Toxic Bases In The Urine Of Parathyroidectomized Dogs, Journal Of Biological Chemistry, Vol. XV, No. 1, July, 1913; and 3) The Physiology Of The Parathyroid Glands, The Journal Of Laboratory And Clinical Medicine, Vol. I, No 5, Aug. 14, 1916; [A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at the University of Michigan]. His fourth paper, Tetany And The Parathyroid Glands, Medicine and Surgery, Jan. 1918, was published while he was Professor of Physiology and Physiological Chemistry at the Detroit College of Medicine. In this paper Dr. Koch approached this subject matter from the point of view of the physiologist.

In 1913, it was Dr. Koch's second publication that alerted the interest of the editor of the Journal of the American Medical Association that he had come upon a new approach to the understanding of the function of the parathyroid glands and their relationship to toxicity and to disease. In the J.A.M.A.'s editorial Chemical Consequences of the Removal of the Parathyroid Glands, Sept. 27, 1913, Vol. LXI, No. 13, p. 1049, the editor reported on the importance of this research. This editorial concluded with this statement:

The outcome of the discovery of the toxic bases in the urine is the suggestion of Koch that the parathyroid secretion appears to be concerned also with anabolic processes related to the synthesis of nuclear contents. Whether or not such a hypothesis can be further substantiated remains to be seen; in any event the final successful isolation of recognized toxic chemical products of traceable origin has paved the way to definite conceptions and specific lines of inquiry where hitherto the explanations have been vague and the outlook unpromising.

This parathyroid research of Dr. Koch was subsequently confirmed by the research of Professor D. Noel Paton three years later. In Part IV, The Parathyroids: -Tetania Parathyreopriva, Professor Paton wrote:

Lastly, the observation of Koch that methyl-guanidin appears in the urine of dogs after parathyroidectomy seemed also to hint at the connection of such compounds with the onset of tetany. In Professor Paton's conclusions to Part IV, he said: The symptoms of tetania parathyreopriva are not primarily due to decrease in any constituent of the body, e.g. calcium ions; and The Symptoms are identical with those produced by the administration of salts of guanidin and methyl-guanidin. In Part V, Professor Paton goes on to say: W. F. Koch in 1912 and 1913 recorded the presence of increased amounts of guanidin, methyl- and dimethyl-guanidin, along with other bases in the urine of dogs after parathyroidectomy. At the end of Part V, in his conclusion he stated: There is a marked increase in the amount of guanidin and methyl-guanidin in the blood and urine of dogs after removal of the parathyroids and in the urine of children suffering from idiopathic tetany. (Department of Physiology, University of Glasgow – September 11th, 1916).

Subsequently, Professor Paton received the Triennial Prize in Medicine from Harvard University for his research on the function of the parathyroid glands in 1918.

Professor Meyer Bodansky, Ph.D., in his textbook Introduction To Physiological Chemistry (1927) p. 327 wrote:

Certain physiologists (Koch, Noel Paton and others) have attributed the symptoms of parathyroid tetany to guanidine or methyl-guanidine, which Koch found to be present in the urine of parathyroidectomized dogs. According to this view, the parathyroids control in some way the metabolism of guanidine. In the normal animal, guanidine is presumably detoxified by these glands.

First Cancer Research Paper Published and The Medical Profession Attempted Takeover of Dr. Koch's Cancer Research

A New And Successful Treatment And Diagnosis Of Cancer was Dr. Koch's first published paper[3] on his original cancer research. This was a preliminary cancer research report to the local medical profession only. At the time of this report, Dr. Koch was seeking the full cooperation of the medical profession in order for him to set up a scientific clinical cancer research-testing program for his method of treating cancer in the Detroit area. With the full cooperation of the local medical profession, he would be able to treat several hundred terminal cancer cases with his new method of treatment and then make a full disclosure of the results. This was part of his overall scientific cancer research program that had started when he was at the University of Michigan. In 1919, Dr. Koch had the full support and cooperation of about fifteen oncologists, in the Detroit area who permitted Dr. Koch to treat some of their terminal cancer patients. He closed his paper with the following paragraph:

"I believe that you will appreciate the importance of this cancer work and believe that you are all interested in my request for co-operation. I wish to work up very fully several hundred cases for final report. I shall be glad to interview anyone regarding this matter, but for reasons that you will appreciate, wish only cases that have not received Ray treatments."

I quote the following from this paper:

A NEW AND SUCCESSFUL TREATMENT AND DIAGNOSIS OF CANCER

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By WILLIAM F. KOCH, Ph.D., M.D., Professor of Physiology, Detroit College of Medicine and Surgery; Research Pathologist to the Woman's Hospital; Director of Laboratory to the Jefferson Clinic

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"Statistics show that there are over 200,000 cases of cancer in this country alone. The mortality is one out of eight for females, and one out of twelve for males, in spite of the great advances in diagnosis, surgery, and in the use of X-ray and Radium. It is hardly to be wondered at that the successful treatment of this disease should be sought in some other field of endeavor, as chemistry, for instance. I am glad to be able to announce that such a search has not been barren, and that indeed a number of inoperable cancer cases have already been clinically cured through a bio-chemical treatment with which a fair portion of the Detroit Profession is now familiar.

"It is the purpose of this paper to explain briefly the history and principle of this treatment in order to engage interest and co-operation in this very necessary work.

"In 1912 and 1913 (1), I reported the occurrence of the toxic quantities of guanidine, methyl-guanidine and other alkylated guanidines in the urines of parathyroidectomized dogs, and concluded that these substances were responsible for the symptoms and death of such animals. In 1917 (2), this work was amply confirmed at the University of Glasgow. In the meantime, I was able to isolate from parathyroidectomized dogs' urines the precursor of the quanidines, namely, methyl cyanamide. (3) This substance is formed by other body cells than those of the parathyroid glands after parathyroidectomy quite quickly combines the amino group liberated in the metabolism of amino acids and thus becomes a quanidine.

"I was never able to isolate quanidine from any normal tissue or unputrified protein. So it was presumable that whatever quanidine was formed in the body had its origin in a cyanamide. Now by preparing the protein of the various living organs so as to kill immediately all the ferments, dry it, and free it from all fats, those groups, which are metabolically active, are preserved for study. And by applying a certain chemical compound, which readily binds the cyanamide group, it appeared that all normal tissue proteids contained this group. On testing cancer proteid, however, a peculiar behavior was observed which differentiates cancer and normal protein.

"This substance when purified, taken up in water and immediately injected subcutaneously into a cancer patient, causes practically no local reaction; but instead, after about 24 hours, a very decided focal reaction takes place. Wherever the cancer tissue may be, its' cells are killed, their ionic concentration increases, the osmotic pressure increases, they take up water, swell and disintegrate. The swelling causes pain and the absorbed, disintegrated products are oxidized causing fever.

"Those two things, focal pain and fever, constitute a reaction which lasts all the way from 6 to 48 hours, depending upon the amount of cancer tissue killed, and of course this depends upon the quantity of substance injected. Such a reaction occurs only in cancer cases and only in the presence of cancer tissue. After the cancer tissue has disappeared, no more reaction can be elicited, no matter how large an injection is given, an important diagnostic aid. The specificity of the substance for cancer is evidenced by the fact that while giving these injections in rapid succession (that is daily or every two days for a period of five weeks), a blood count will rise from 2,850,000 to 4,600,000 red cells and the haemoglobin from 37% to 82%. Thus the delicate red cells are not injured. At the same time a mass of cancer tissue, the size of a large cabbage, will entirely disappear, and all the signs and symptoms of the particular cancer will disappear with it, function return, and the patient become clinically cured.

"Stomach, liver and rectal cancers clear up the quickest. Uterus cancer responds slightly more slowly. Squamous cell carcinoma responds about one-half as fast as stomach cancer. No cases of cancer that have previously received X-ray or Radium treatment respond to this treatment at all since these agencies have altered the chemistry of the cancer cell. I therefore, cannot make any statements regarding breast cancer, since those breast cases that I have treated have all been previously rayed.

"Before presenting a few brief case descriptions, I wish to express my gratitude and appreciation to Dr. Carstens, Dr. Judd, Dr. Paterson, Dr. Irvine, Dr. Palmerlee, Dr. Palmer, Dr. Blain, Dr. Watkins, Dr. Hewitt, Dr. Friedlander, Dr. Hackett, Dr. John Burleson, Dr. Ash, Dr. Van Baalen, Dr. Hurst, for the excellent cases they have offered and for their kind co-operation in the treatments of their cases. I think that interviewing them would prove more interesting and instructive than any mass of details that I could here append. (Seven cases were briefly reviewed in this paper:)

"It appears from these brief case histories, that each injection does its work and that the growth does not become immune to the treatment, that destruction of the cancer removes all its noxious activities as eroding blood vessels, nerves, etc., and that the toxic products are no longer generated, so that the cachecia disappears and a return to the normal strength, body weight and blood count ensue.

"I believe that you will appreciate the importance of this cancer work and believe that you are all interested in my request for co-operation. I wish to work up very fully several hundred cases for final report. I shall be glad to interview anyone regarding this matter, but for reasons that you will appreciate, wish only cases that have not received Ray treatments."

BIBLIOGRAPHY

(1) Koch Jour. Biol. Chem., 1912, Vol. XII., p. 313; Jour. Biol. Chem., 1913, Vol. XV., No. 1, p. 43.
(2) Paton, Findley, Watson, Burns, Sharp, Wishart, Quart. Jour., Phys. 1917, Vol. X., Nos. 3 and 4.
(3) Koch Jour. Of Med. and Surg., Jan., 1918, pp. 1 to 9.

Only by chance, about a month later, a newspaper reporter for the Detroit News came across Dr. Koch's research paper and became interested in his original approach to the treatment of cancer. Thus on September 7, 1919, the following article was published in the Sunday Edition of The Detroit News newspaper giving a full review, to the public, on Dr. Koch cancer research.

THE DETROIT NEWS, SUNDAY, SEPTEMBER 7, 1919

REPORTS NEW CANCER SERUM

Professor at Detroit College
Stirs Medical Profession
by Announcement.
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Members of the medical profession in Detroit have been stirred by the announcement of a new treatment of cancer by Dr. William F. Koch, professor of physiology at the Detroit College of Medicine and Surgery, and the statement he has already clinically cured a number of inoperable cancer cases.

Dr. Koch's announcement is made in the issue of the Detroit Medical Journal, in a paper entitled "A New and Successful Treatment and Diagnosis of Cancer."

He describes the treatment as "a subcutaneous injection of about 30 drops of a bio-chemical compound."

RESULT OF LONG STUDY,
This compound, Dr. Koch told a reporter, is the result of nine years of study and experiment which began, in the chemical laboratory of the University of Michigan, with his study of the function of the parathyroid glands, four glands, about the size of a small pea, lodged deep in the neck.

"The function of the parathyroid glands," Dr. Koch said, "was a mystery from the time these glands were discovered until some years ago when I cleared up the matter to a point where a very important disease, Eclampsia, and the change which constitutes cancer could be studied. Eclampsia treatment will be reported soon in some medical journal." (Eclampsia is an intoxication resulting from insufficiency of the parathyroid glands. It occurs in pregnant women and is quite rare.)

"The parathyroid glands are necessary to life. If they are injured the afflicted person dies in a characteristic way – in convulsions.

"The first contributions to this subject were made at Johns Hopkins University. Unfortunately they were erroneous and only made the mystery deeper. It was when I discovered that when these glands are injured severe poisonous substances develop from a previously useful substance that we were placed on the right track again. The poisonous bodies are certain guanidine and they develop from a hormone, which I found to be methyl-cyanimide.

COMPOUNDS ACTION,
"While testing the various organs for the presence of this compound and also testing cancer the same way, I noted the difference between cancer and normal tissue and it is this difference that forms the basis of my cancer treatment."

The action of this compound, which Dr. Koch asserts, destroys cancer tissue and has no effect on normal tissue, he describes as follows:

"The serum is carried to the cancer by the blood. The cells are killed. Their osmotic pressure increases and they become waterlogged and swell. The pressure of the swelling causes more pain until the killed part has been disintegrated and absorbed, and the absorption, or burning up, causes fever, usually occurring about 12 hours after the injection of the serum. Cancer tissue so absorbed also serves as nourishment. If the patient has been starved a long time because of cancer of the stomach, a large cancer, paradoxical as it is, is a benefit since, once killed, it supplies food elements and actually gives strength to the patient. Cancers previously treated with X-ray or radium, however, if killed by the serum treatment, gives products that are very toxic, sufficiently so, in some instances to kill the patient.

Dr. Koch's treatment will not, he says cure cancers that have previously had X-ray or radium treatment.

TYPES READILY CURED,
"I have treated 30 such cases and in every instance the treatment was a failure," he said, "Except that it is a matter of electron vibrations, I am in the dark as to the exact nature of the change in the cancer chemistry induced by X-ray or radium treatment. I am now trying to solve that problem."

Neither will Dr. Koch say that his serum will cure skin cancer or breast cancer.

"I have had good results with skin cancer several times," he asserted, "but I have not had enough experience with it to say that my compound will cure it. The compound was not constructed according to the chemistry of such growth. The material I used for analysis when starting the work was rectal and stomach cancer. The types that respond best to the treatment are cancers of the liver, stomach, intestines, rectum and uterus, which are apparently rapidly and completely cured.

About ten injections of the serum, Dr. Koch says, will completely cure a stomach cancer as big as a man's head and stomach cancers are practically always inoperable.

BAD CASE CITED,
"I had a woman patient last August," he said, "with a cancerous growth as large as a watermelon. She was too weak to walk and wanted to live only until her son returned from France. I did not expect her to live a week. Today she is as well as any of us. It is the same with all stomach cases I have treated; they are either entirely well or getting well as quickly as treatment proceeds. And the same is true of rectum or uterus cancer that have not been treated with X-ray or radium."

All Dr. Koch's cases have been well advanced. It makes no difference in the success of the cancer treatment how near the death the patient may be, he asserts.

"Just as long as the blood is circulating to carry the serum from the site of injection through the growth, the compound will do its work," he said. "Of course some patients may be so completely exhausted as to die, anyhow, or they may have some other fatal malady. If one of the patient's vital organs is destroyed; curing the cancer obviously will not save his life. He is likely to die before the cancer is cured."

CONFIRMED BY PHYSICIANS,
The stomach, Dr. Koch says, although important, is not necessarily a vital organ.

According to Dr. Koch, not one case of cancer in the history of the world had been cured by medical treatment until he discovered his compound.

Several Detroit physicians, whom Dr. Koch thanks in his paper for their co-operation in the cancer treatment, have confirmed Dr. Koch's statement that he has established clinical cures of cancer in specific cases.

By "clinical cured" is meant they explained, that insofar as can be determined without exploring the patients by operation to justify a positive statement that no trace of cancer remains or by waiting five years to ascertain that there is no recurrence of the cancer, the patients have been cured.

Although all spoke of Dr. Koch's treatment with that reserve which, in discussing the value of another man's discovery of a disease-treatment, marks the utterance of reputable physicians, jealous of their own professional reputations, they were unanimous in the opinion that Dr. Koch's treatment has shown remarkable results. That, from the viewpoint of the physician, caution in indorsing a "cancer cure" is natural, is emphasized by the statement of Dr. J. H. Carstens, and solemnly echoed by two others of the physicians interviewed, that "the man who discovers a cure for cancer will be the greatest man in the world."

BRILLANT CHEMIST,
Dr. Alexander W. Blain, surgeon, head of Jefferson clinic: "Dr. Koch is one of the most brilliant physiological chemists in the country. It is too early to say he has a cancer cure, and it should not be regarded as a 'cure-all' but as an adjunct to the treatment of cancer. No cure can be established until five years have shown there is no recurrence of the disease. But what he has done is this: He has made people well who were so far gone with cancer that they had only a few weeks to live. Several patients he treated for me are working hard and enjoying life a year after they 'should have been dead.' Even if Dr. Koch gets no further with his work than he is now – and he is experimenting now with his fifteenth mixture, I believe – even if he has not discovered an absolute cure for cancer, he has added years to the lives of cancer victims. There are nearly 300,000 victims of cancer in the country and if they could all have a few years of usefulness added to their lives the saving to the country would be enormous. What he has already done is a boon to humanity and a great step forward in physiological chemistry."

CONFIDENCE IN KOCH,
Dr. Walter L. Hackett, visiting gynecologist and obstetrician, Woman's Hospital: "There is no question of Dr. Koch's sincerity and ability. It will take five years to determine whether or not he has a real cure for cancer, but I have enough confidence in his treatment to let him inject his serum into any cancer patient of mine. I had, as a patient, an old woman who was very far-gone. At Koch's suggestion I operated on her and took out such cancerous growths as were apparent. Later, the cancer grew again. Dr. Koch gave her four injections and she is now apparently entirely well. I have seen some excellent work done with radium, but never anything so remarkable as this. Dr. Koch should be given every opportunity to prove the value of his treatment."

Dr. C. Hollister Judd, president of the medical board, Women's Hospital: "When we stop to consider that one woman in every seven and one man in every 12 have cancer, the importance of the work Dr. Koch is doing can not be overrated, though it is too early to say that he has a cure for cancer. He has been working under many handicaps. The cases given him have been the 'hopeless' ones, where the surgeons saw the uselessness or impossibility of further operation, and his treatment has shown remarkable results."

SHOULD BE HELPED,
"Everything should be done to encourage him in his work. He should not be obligated to think, for instance, of expense. Yet his serum costs him $8 an injection, I believe. He ought to be given $100,000 to carry on his work and he ought to have a ward in a hospital where he could concentrate his patients. Women's Hospital is arranging to give him 12 beds. Dr. Koch's work, which is still experimental, is important in this sense, he is studying cancer physiologically rather than pathologically. That is, instead of working on the cancer tissue of a dead person, he is working on patients who are alive. There might be a question as to which method is more interesting to the physician, but there is no question of which appeals more to the patient."

Dr. J. H. Carstens: "He has apparently effected some wonderful cures, but it is too soon to say this positively. I am against publicity in the matter, as we do not want persons afflicted with cancer to flock to Detroit for treatment when they will not be able to be taken care of. Dr. Koch will get all the cases he needs."

TOO EARLY TO PREDICT,
Dr. G. H. Palmerlee: "Dr. Koch treated an old man for me. The growth seems to have reduced materially and the patient began feeling better after the first few treatments. It is too early to say that Dr. Koch has a cure for cancer. He should be given a ward in a hospital with a number of cases proved beyond the shadow of a doubt to be cancer. Then a commission of physicians should be appointed to watch the effect of Dr. Koch's treatments on the patients. If he had 100 cases of positively proved cancer and he established cures in 90 per cent of the cases, he would be getting somewhere.

"If he can cure 75 per cent of his cases – even if he has not a positive cure for all cancer – his discovery is a boon to humanity, for the man who discovers a cancer cure will be the greatest man in the world. One of the difficulties of curing cancer is that ordinarily it is not discovered until the case is too far advanced to be operated. Operations are successful if the cancer is caught early enough and if all the cancer cells are removed. If, however, a few of the cells escape and spread through the lymph tracts or blood vessels to other parts of the body, the cancer will break out again and it is obvious that only a certain amount of tissue can be removed from the body.

WITHHOLDS FORMULA,
"Where a case has been operated and cancer breaks out again, there is almost no curing it by further operation. The trouble with making any announcement of a cancer cure is that too much will be expected of it, as too much was expected of X-ray and other innovations. The X-ray is of wonderful assistance in diagnosing, in locating foreign particles in wounds, obstructions of stomach or intestines, and in discovering broken or dislocated bones, but it is not a cure all, as people thought when its discovery was announced."
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The establishing of a commission of physicians to study the progress of the cases he treats is, Dr. Koch says, exactly what he wants.

"I do not want to make the formula public just yet," he declared, "because I fear it might be commercialized. The compound is difficult to make and it deteriorates rapidly. If I published it and quacks or unscientific men started mixing it and treating cancer with it, the results would be disastrous, not only possibly to the patients, but to the ultimate success of the treatment. Improperly mixed or administered the compound would fail to do its work. It would be discredited by the medical profession and it would take years to establish its value. When I have proved to the satisfaction of the medical world that it dose its work, it will be time enough to make the formula public."

Following the publication of this article in the Detroit News, on September 7, 1919, a great public interest started to develop in the Detroit area. Recognizing this fact, the Wayne County Medical Society and its Cancer Committee, of which Dr. Koch was member, tried to take over the clinical research of his discoveries from Dr. Koch. The following article subsequently appeared in a Detroit newspaper in late September 1919.

DOCTORS SEE PROGRESS IN CANCER FIGHT

Wayne County Medical Society Plans to Give
New Serum to the World

The Koch cancer serum is to be given to the world.

Dr. James H. Carstens, president of the faculty of the Detroit College of Medicine and Surgery made the announcement today.

The Wayne County Medical Society, which is closely affiliated with the American Medical Association, will distribute the serum through a committee of five.[4] It will be manufactured by Prof. William F. Koch and his associates in the laboratories of the medical college (The Detroit College of Medicine).

Mayor Couzens is expected to ask permission of the city council to turn over a section of the Herman Kiefer Hospital for Detroit tests. He discussed the matter with Dr. Carstens yesterday.

No claim had been made as yet that the serum will "cure" Cancer. But a nation-wide effort will be made to learn just what the preparation will accomplish. Really marvelous results have been achieved by Dr. Koch in Detroit, physicians report and the medical society is unanimous in the belief that the profession everywhere should be given the opportunity to try out the serum and report on its effects. In this way a successful march upon the dread disease at last may be accomplished. Again the attempt may fail. Time will tell.

Recently, through publication in a medical journal of an article by Dr. Koch, news of the serum was spread abroad. Newspapers took up the cry with the result that today every train is bringing cancer sufferers to Detroit; every hour more telegrams and letters from the hopeful who, misled in the belief that a 'cure' actually has been found, hope to obtain some of the serum, or come to Detroit for personal care and observation.

This rush of afflicted persons to the city perhaps has hastened the decision of Prof. Koch and his associates to give the serum to the medical profession. Physicians everywhere now will be given the opportunity to use the preparation under every conceivable condition and upon every variety of the disease. The serum will rise or fall upon the verdict of the profession in whole, and in this finding Prof. Koch and his friends are content to concur.

This article pointed out the extensive interest and wishful involvement of certain members of the Wayne County Medical Society in Dr. Koch's cancer research. It also pointed out the importance of proper, independent, scientific clinical testing in the support of all cancer research. Certain members of this medical society already knew, first hand, that some of their terminal cancer patients had "clinically recovered"[5] from various forms of cancer through the use of the Koch Treatment when other methods of cancer treatments had failed. This article also indicated how Dr. Koch's cancer treatment would be taken over, controlled and distributed through the Wayne County Medical Society, a division of the American Medical Association. It should be noted that some of the members of this medical society expected that they would individually receive financial benefit through the early commercialization of Dr. Koch's cancer research and treatment as soon as his method of treatment had been officially approved. After these doctors of this committee learned that Dr. Koch was interested in proving the therapeutic activity of his discoveries and that he would not go along with their proposed exploitation of his research, they prematurely closed down this clinical investigation after about six weeks. They then tried to blame Dr. Koch for their own actions. The medical doctors who were willing to continue to support Dr. Koch's cancer research soon succumbed to the influence and pressure placed upon them by those members of their society who had had great expectations of receiving financial rewards from the commercialization of Dr. Koch's research and treatment for cancer under their auspices. Dr. Koch's refusal to yield to the dictates of these local medical leaders laid the groundwork for further A.M.A. official opposition to Dr. Koch, his medical research and his treatment for cancer.

The success of this basic cancer research, that Dr. Koch had started while at the University of Michigan many years earlier and which was financed mostly on his own, was of primary importance to him. Both his father and his father-in-law had died from this dreaded disease and he did not want this to happen to anyone else. Dr. Koch wanted to be able to treat hundreds of cancer patients in a scientific manner, free from a political bureaucracy, in order for him to fully document each cancer cure. This was a full time scientific medical research commitment on his part and he knew that the meager laboratory facilities made available to him, at the Detroit College of Medicine, were inadequate for him to continue his cancer research there. Upon learning that the Detroit College of Medicine was unable to give him the necessary financial support for him to continue his cancer research, Dr. Koch wrote the following letter of resignation to the Board of Education for the City of Detroit.[6]

DETROIT COLLEGE OF MEDICINE AND SURGERY
Detroit, Michigan

Wm. F. Koch, Ph.D., M.D.
Prof. of Physiology and Physiological Chemistry
Oct. 17, 1919

Board of Education
Detroit, Michigan

Gentlemen:

In so far as the physiological research which I am now carrying on requires my whole time and because it appears that the Board of Education of the City of Detroit cannot support this work, I beg you to accept my resignation from the chair of physiology of the Detroit College of Medicine and Surgery.

Sincerely,

Wm. F. Koch

The official cancer investigation that started in late fall of 1919 and lasted for only a few weeks was prematurely terminated by the cancer committee. Dr. Koch had been permitted to treat only nine terminal cancer cases as opposed to all the cancer patients that he had been previously promised. Also, the hospital facilities offered him were grossly inadequate for conducting a proper scientific cancer investigation of his treatment. After the investigation started, it become apparent to Dr. Koch that he would never receive the full cooperation from all of the members of the Cancer Investigation Committee appointed to conduct the Herman Kiefer Hospital clinical cancer tests. Their antagonism and lack of cooperation resulted in this premature closing of the clinical cancer investigation of his treatment. At the time this investigation was closed, one of the official cancer patients, Mrs. Edith Fritts, was discharged from the hospital. She elected to continue treatment in Detroit under Dr. Koch's personal care. While under Dr. Koch's medical care, she made a full recovery from her cancer and lived cancer free until her death in 1935 that resulted from an accident.

As a direct result of the failure by this cancer investigation committee to cooperate with Dr. Koch and because of the erroneous report published on the first page of the weekly issue of the Wayne County Medical Society's Weekly Bulletin on the December 22, 1919, Dr. Koch wrote the following letter to the Wayne County Medical Society.[7]

WM. F. KOCH, A.M., Ph.D., M.D.
Detroit, Michigan
December 22, 1919

To the Wayne County Medical Society:

Gentlemen – A committee appointed by the Wayne County Medical Society met me last Friday and requested me to present information regarding my cancer treatment.[8]

I was told the information was desired so as to ascertain:

Whether the work was worth continuing.
To dispel misunderstandings and prevent further false reports that have arisen against my methods.

Now the first question requires no answer. This method has tentatively cured a sufficient number of cancer cases to demonstrate that there is a scientific principle underlying it. This principle needs development, both chemical and clinical, so there can hardly be any question about whether the work is worth while.

The second question can be answered by a short history of this work.

Only cases beyond other means of help have been treated by me. For a long time, indeed, most of the cases that have come to me were moribund before treatment. A large number of these cases needed most urgent relief from changes secondary to the cancer. They offered material for experiment rather than cure.

The first compounds used were tentatively curative in carcinoma of gastrointestinal and endometrial origin, but there was the possibility of preparing a large number of closely related compounds all of which should possess some positive or negative value in treating cancer. Moreover, there were types of cancer that did not respond to the first series of compounds and the fact that rayed cancer was clinically different from unrayed cancer made it paramount to prepare as many of the compounds of the series as could be prepared and to try them clinically for positive or negative value. Most of the time since last March was spent preparing and testing these compounds. Now, when we remember that the rule in advanced cancer is that the patients run their course and die, instead of getting well, as in pneumonia, for instance, and since the vitality of my patients was, as a rule, very low, and because they were treated by compounds of uncertain action used in sequence as they were prepared, the number of tentative recoveries was necessarily small; but yet some valuable information has come from the small amount of autopsy material. Likewise, pieces of tissue removed during treatment have given valuable information. Of the clinical results, a number of tentative cures have been established, also a number of clinical improvements, all of which have demonstrated that among the 22 compounds used, as far as can be judged from the small number of cases treated, one compound specifically kills cancer arising in the gastrointestinal tract and endometrium and endocervix; one compound kills breast cancer of one type only, specifically; one compound kills rodent ulcer specifically. Several compounds have no demonstrable effect, and several recently prepared compounds very markedly increase the rate of growth of cancer of the gastrointestinal tract and prostate.

So much for the results to date.

The maintenance of the work was for the first year entirely personal. The meager facilities of the Laboratory of Physiology of the Detroit College of Medicine and Surgery were used then also. Since March about 30 percent of my patients have contributed to the work. The other 70 percent are treated free.

In regard to cooperation: I am greatly indebted to those members of the Wayne County Medical Society that have given their clinical support. I believe they are physicians in the true sense of the word. It must be expected, however, that the necessary element of falsifiers have in their number those and their adherents who at one time expected that financial advantage would accrue to them from the work. Moreover, there always are those who are jealous.

My aim is entirely idealistic, and so far as I know now, I shall contribute my findings in every detail only when I can establish them completely scientifically, so completely, indeed, that any question can be answered by the scientifically obtained facts in hand.

In order to establish this work in such a way, money is needed to pay a clinical staff. Ehrlich was given a million dollars to find a remedy for syphilis. I have attacked this heretofore-impossible cancer problem on my own resources, together with the very small facilities of my college laboratory.

From this effort something tangible has developed, which, if applied in the treatment of cancer, should relieve many sufferers, and which, when scientifically extended, should afford new means of relief.

Whether or not the Wayne County Medical Society wishes to cooperate with me is up to the society. The cooperation must be spirited. In the first place, the attitude expressed in the editorial in the Bulletin of December 22 must be corrected. The first paragraph of this editorial is false, as the editor could have easily determined if he had taken the trouble to ascertain. The third paragraph is also a misrepresentation. The Board of Health and the Wayne County Medical Society offered something which at first promised to become the long hoped for chance for a scientific study, but very soon proved to be only an opportunity for something not worth while, simply a preliminary clinical report.

Such a report we already have, and no report is of value unless the compounds are reported. This I will consent to do only when I can make a scientific report showing the how and why certain compounds act on cancer.

To make such a report, a clinical staff and at least one paid chemist and one assistant chemist is necessary. I was not able to secure a chemist under less than one-year contract, and the beds at Herman Kiefer hospital were not allotted for that time. Indeed, the superintendent informed me four weeks after the beds were granted that they would be needed for contagious diseases. No working arrangement could thus be made for the desired report. Then the committee did not cooperate with me. One member never visited the hospital and only attended the final meeting to subscribe his name to the report of my negligence.

Another member, who is supposed to have a corner on cancer tissue, when this work was first started and when I was introduced to him to ask for cancer material, turned his back on me and refused the introduction. Other members of the committee, who seemed to be fair and unbiased at first, soon came under the sway of those whom they knew and said were distinctly unfriendly to my work and me. There was thus no common aim and could be no cooperation.

The fourth paragraph says I promise much and charge well. Nothing is further from the truth. I promise nothing. My patients know this, and I require them to be examined from time to time by their physician that refers them to me. This aids my judgment as to the results and keeps the patients informed accurately. I have referred already to the 30 per cent that pay and the 70 per cent that do not.

The last paragraph of the editorial touched on the secret of my success. I try to discuss this problem with those I respect sufficiently in the hope that they will offer encouragement and guidance; and from them only do I wish to receive it.

Otherwise the best cooperation the Wayne County Medical Society can give is to leave alone a matter they have never advanced. I should not be asked to give my time to any activity that cannot aid me in placing this work for the treatment of cancer on a distinctly scientific basis. All of my time is needed and given to this end. In the future I shall have no time for any further activities that are not directly constructive to the intrinsic value of this work."

Sincerely yours,

W. F. Koch

On Christmas Day, December 25, 1919, the following article appeared in the Detroit Free Press. This newspaper article illustrated the importance of independent financial support for basic medical research, free from the control of the politicians and the medical associations.

KOCH ASKS AID TO TEST CURE
Won't Some One Pay Cost of
Real Trial? Is Plea of Cancer Foe

Is there not some rich man in Detroit with enough interest in his fellow men to pay the bare expenses of the trial of a cancer cure that has already shown enough tentative cures to have attracted the attention of physicians of prominence in New York, Chicago and Detroit, as well as of minor practitioners in all parts of the country?

This was the query Wednesday evening of Dr. W. F. Koch, whose assertion that he has discovered 22 chemical compounds useful in the treatment of as many different varieties of cancer, has been under investigation by the Wayne County Medical society. The investigation resulted in a disagreement that found an airing at last Monday evening's meeting of the surgical section of the society.

Wants Nothing for Self

I don't want a penny for myself," continued Dr. Koch, referring to the reported intention of the Wayne County Medical Society of asking the city authorities to pay him a salary of $5,000 a year and place a full staff at his disposal for 12 months in an effort to fully test his claims. "What I want and what I am determined to get before I go ahead with any test are the right conditions."

The Ford Hospital, for instance could easily place 50 beds at my disposal, or rather at the disposal of the test, for one year. The city could provide nurses and chemists and other attendants necessary for a proper investigation of the results of the treatments. It would cost probably $65,000, but this is an insignificant amount when you remember that Sir Edward Speyer gave Ehrlich $1,000,000 and that the German scientist experimented with 610 compounds before he discovered the famous "606."

I have an offer to go to Chicago but have decided to refuse it because the conditions are not the ideal ones for which I am searching.

In Touch With Other Cities

I probably will read a paper before the February meeting of the American Congress of Internal Medicine in Chicago and I am in touch with New York doctors of prominence. If Detroit will not prove itself big enough for this thing, I am sure some other city will.

Following the December 22, 1919 Wayne County Medical Society's Weekly Bulletin's biased, untruthful and misleading report on their investigation of Dr. Koch's cancer treatment, he never received any cooperation from or any scientific investigation of his cancer research by the Wayne County Medical Society. Likewise, there never has been any investigation of Dr. Koch's cancer research by the American Medical Association, assisted by Dr. Koch, as he had first requested in his letter of August 3, 1920 to Dr. George H. Simmons, Editor of the Journal of the American Medical Association.

Aug. 3, 1920
Dr. George H. Simmons
Chicago, Ill.
Dear Dr. Simmons:

I have been working for the last few years on a treatment for cancer, which requires now to be presented to the medical profession in the proper, and I need your advise in further procedure.

I would like my report to the profession to be authoritative in placing the scientific status and clinical value of this treatment and I can see no better way than that the material for this report be worked up and reported under the supervision of a committee appointed by the A.M.A. In order that there should be no undesirable secrecy I am willing to submit for publication in the Journal a preliminary report with ample material to explain the working of the treatment.

It might convenience matters if the material for the final report be worked out at the University of Mich. Hospital, if such a step could be arranged.

I would like to know your disposition of the matter and should appreciate any advice you may be kind enough to give.

Sincerely,

W. F. Koch

What Dr. Koch wanted, and what he was asking for, was the full support of the public and the local medical profession to permit him, as the research scientist and discoverer of a new method for the treatment of cancer, to be able to carry on his scientific research with up to date scientific facilities, free from the control of third persons, who had contributed nothing in the past to his research and who did not understand the scientific principles on which his treatment for cancer worked. Dr. Koch knew that his cancer research was still in the research and development period. With the full cooperation of several friendly local doctors, he had already been able to demonstrate a few "clinical cures" in the treatment of some forms of cancers for a period of less than the approved "five years period", the accepted standard guide for establishing a complete "cancer cure." He wanted to expand the scope of his research and perfect his treatment before it was to be given to the public for general use.

Dr. Koch came to the conclusion that it would be unscientific for a researcher to turn over his preliminary research to others to test before he had first completed all of the basic research himself. This is why completed basic research was so important to him. A researcher does not want another person to try to duplicate one's original research until that original research has been perfected. If a person, in trying to duplicate the original research of another, is incompetent and fails then this failure, unfortunately, is a reflected upon the discoverer only. Dr. Koch had been testing over twenty different substances, and he knew that some of these products had therapeutic action against certain forms of cancer and some substances had no effect at all against any form of cancer. Dr. Koch also knew that there still was more basic research, on his part, that had yet to be done by him before he could release full details of his work. He wanted to fully identify the chemical structure of this material that he was working with and to perfect the chemistry of these therapeutic agents before he could publish all of this information. He also wanted to be able to identify the types of cancer conditions that each of these products would be most effective in treating. This type of research could only be done under his direction and scientific control and through large-scale clinical trials in a modern impartial hospital, such as the hospital at the University of Michigan. Once the validity of his research had been clearly established and accepted by the medical profession, it would then be proper for him to make full disclosure of his scientific discoveries. Even today, no university, research laboratory and/or pharmaceutical company makes full disclosure of their basic research to the public until the validity of their discoveries have been established and accepted. It should be noted that Dr. Frederick G. Banting did not reveal all of the information on the preparation of insulin until he received his first patent in the 1920s. Like Dr. Banting, Dr. Koch felt that it was important to withhold the full identity of the substances he was working with to prevent incompetent or unscrupulous manufacturers from flooding the market with specious or untested preparations and at the same time claiming their products to be the Koch medications. Such actions by unauthorized persons would do his research and his name great harm.

SCIENTIFIC SUPPORT OF DR. KOCH'S RESEARCH

In 1924, Dr. C. W. Allen, Professor of Medicine, Tulane University of Louisiana, personally investigated the cancer research of Dr. Koch. Upon the completion of this investigation he prepared a report on his investigation and presented it to his local medical society, the Orleans Parish Medical Society, which was affiliated with the American Medical Association through his State Medical Society.

Based upon Dr. Allen's personal investigation of the Koch Cancer Treatment and the favorable information he had learned about Dr. Koch and his cancer treatment, he contacted several doctors in New Orleans to tell them of his investigation. Finally on April 27, 1925, he read his report, SOME INFORMAL REMARKS ON THE TREATMENT OF CANCER [9] to the Orleans Parish Medical Society. This report included a brief history on how he became interested in Dr. Koch's cancer research and treatment and the results of his investigation. In this report Dr. Allen said:

Last October a patient of mine suffering from an inoperable cancer of the rectum asked my advice about the Koch treatment. I strongly advised him to have nothing to do with it, that it had been investigated and pronounced worthless, and that I regarded it as a fraud. He, however, was determined to go to Detroit and consult Dr. Koch. At that time he was emaciated, weighing less than a hundred pounds and was so weak that he had to be carried to the train on a stretcher. Two months later he returned to New Orleans weighting more than 130 pounds, and now weighs 170 and attends to business as usual though there is still some local evidence of his trouble.

I am frank to say that I was amazed at the wonderful improvement in this man. I then called on another patient here who was treated by Dr. Koch at the same time. After talking with these two afflicted persons I was deeply impressed, not only by their personal experience but also by statements concerning others with whom they came in contact while being treated.

A doctor friend whose wife was in a hopeless condition from carcinoma called on me to discuss the matter and as his wife was unable to travel we wired Dr. Koch and received a treatment. In a similar way I received a dose for a hopeless bladder case of Dr. Walther's. With these treatments Dr. Koch sent some directions and information as to what would happen following its use.

The results were so strikingly as he predicted that I became extremely interested.

I looked up Dr. Koch's earlier contributions to medical literature and learned that he had written several creditable papers on the parathyroid glands, such as one would expect from a high-class laboratory man. Dr. Koch's method of procedure in the above work was quite original and his deductions and conclusions were at first not accepted but later were recognized and the proper credit given him. Paton of Glasgow won a triennial prize by a paper on the same subject in which he gave Dr. Koch due credit for what he had done. These papers will be found in the Jour. Biol. Chem., 1912, XII. 313; Jour. Biol. Chem., 1913, XV. 43-63; Jour. Lab. & Clin. Med., 1919, 1,299; and Jour. Med. & Surg. Jan., 1918, 1-9; that by Paton will be found in the Quart. Jour. Phys. 1917 Nos. 3 and 4.

In the A.M.A. Journal of 1913, Page 1049, there is a lengthy editorial devoted to Koch's work on the toxic bases in the urine of parathyroidectomized dogs. Dr. Lewellys Barker on the subject of tetany in a paper read at the Southern Medical Association, in 1922, quotes extensively from Dr. Koch. These papers are, however, of more than passing interest in this investigation as it was through the application of methods of reasoning in cancer similar to those that he used in his work on the thyroid (parathyroid gland) that he feels he was able to recognize the specific toxins which formed the basis of his work on cancer.

Dr. Koch had a bachelor's, a master's and a doctor's degree before he obtained the M.D. degree to give him clinical opportunities to pursue his study of cancer. He, however, does not care for practice of medicine and is not a clinician but strictly a chemist and physiologist.

I was so deeply impressed with the conviction that Dr. Koch had discovered something that at least brought about certain more or less definite reactions indicating some direct or specific effect on cancer that I decided to go up there and make a personal investigation.

Arriving there December twenty-seventh I began a systematic study of his cases and saw many in all the various stages of reaction. Everything was absolutely open to my closest scrutiny and Dr. Koch was often not present during my examinations though always available to answer all questions, which he did with perfect frankness, both to the patients and me. Results were not always favorable, some were slow and uncertain, and he expressed doubt regarding others. He stated that 20 percent of his cases failed to react. All this was done in a spirit of perfect candor and openness that disarmed at once any feeling of the possibility of subterfuge or evasion that may have existed in my mind.

The most interesting and impressive thing was the cured cases; of these I saw a large number and questioned them most closely. There remained no doubt that they had had cancer as they all gave a perfect clinical history. Some were primarily inoperable, many had been operated with recurrence, the majority had had the usual routine of X-ray and radium. They all had been hopeless surgically and had come to Dr. Koch as a last resort.

The interesting thing in questioning these cured cases was that they all had gone through the same course with its varied reactions and toxemia as those I saw under treatment. This naturally increased my interest and encouraged my closer study of the phenomena, which they presented. While many of these were quite sick it was apparent that they were not running a cancer course. The typical cancer symptoms were slowly giving way to a toxemia in which nausea, vomiting, temperature and prostration were the most prominent features with a progressive diminution of pain and finally just a soreness to remind them of their former suffering. During this time, or as long as the toxemia and temperature persisted there was a steady loss of weight until they were reduced to an extreme degree. As convalescence set in, recovery was at first slow later more rapid, and many of them told me that their physical condition and general health was better than they had ever enjoyed formerly.

The preparation used is a delicate, synthetic chemical compound clear and colorless. It is injected subcutaneously in one cubic centimeter dose. The treatment is based on the germ theory of all malignancy and upon the theory that the cancer mass is an attempt at protection by the host towards the invading organism. The organisms being killed the cancer becomes a foreign proteid mass which must be absorbed to be removed. The absorption of this mass is a highly toxic process and produces the various symptoms which occur during the treatment: fever, nausea, vomiting, and depression. These symptoms and reactions of the cancer tissue are subject to considerable variation. At times the mass may swell and there may be an increase in all symptoms including pain, in other cases there is an immediate subsidence in the size of the mass and a lessening of pain. The reason for these variations is not well understood. The cancer mass takes on a bluish color and there is an ingrowth of angioblastic tissue during the stage of absorption. As this vascularized tissue contracts frequent small hemorrhages occur and it may require six to nine months for all of this tissue to disappear. Cases that are badly exhausted before treatment, where the mass to be absorbed is very large, or when the heart and kidneys are weakened are not likely to survive the toxic period.

My duty was apparent. I should take some steps to bring this matter to the attention of the profession and I felt that the best means of accomplishing this as well as for further proof for myself was first to treat a few of my hopeless cases here and properly check this work with the aid of the laboratory. This appeared to me to be the best plan of procedure and I accordingly arranged with Dr. Koch to furnish me with as much of his formula as was needed.

My understanding with Dr. Koch was that should any recognized group of reputable physicians make a calm unbiased investigation of his treatment and accord him due credit for having discovered something useful in the treatment of cancer, he would then make the formula public in some way, such as was done with insulin.

I know that a great many of my friends and associates feel that I have made a mistake in going into this subject but I hope that none will question my honesty or sincerity and just as soon as sufficient time has elapsed for me to arrive at a definite conclusion, based on personal experience, for or against the further use of this remedy I propose to make a frank, positive statement of the results. In conclusion I wish now to present a brief summary taken from the records of cases treated.

Dr. Allen then briefly reviewed ten case histories and then said:

I feel that your careful consideration of the above cases must convince you that they have not run a normal cancer course and if Dr. Koch has not discovered what he thinks he has, he has at least found something which profoundly affects cancer tissue and I feel it should be accorded a most liberal investigation both clinically and in the laboratory as it may at least be the beginning of tremendous possibilities.

I have been persistently at work on the two objectionable features in the use of this preparation; its cost and its secrecy. The cost has been substantially reduced and I feel the problem of its secrecy is open to solution.

The meeting was then open for discussion. During the discussion period, the issue of the secrecy of the Koch medication was brought up as if it was the primary issue and only important matter to be considered. However, some of the doctors did admit that many of them did use secret treatments sometimes. The issue of therapeutic effectiveness of the Koch Treatment was over looked by this group of doctors, it being a secondary matter as if the cancer patient future state of health may not really be that important to the doctors after all.

This intolerance of the medical profession dates back to the beginning when the first clinical investigation was started and then quickly terminated in the fall of 1919 by the official cancer committee. Mrs. Edith Fritts, one of the original nine cancer patients to be treated by Dr. Koch during this investigation, improved in the hospital and subsequent recovery from her cancer while she continued under Dr. Koch's personal care. Her recovery could not and would not be accepted by the local Wayne County Medical Society. These doctors, like the New Orleans doctors, wanted to know what the medications were before they would acknowledge the medical recoveries from cancer. The facts of this case were reported as follows.

Mr. Fritts, in his affidavit-letter, briefly tells of Mrs. Fritts' follow up medical care from Dr. Koch while she stayed in Detroit and the final results she received from of the use of the Koch treatment. It should be further noted that when Mrs. Fritts left Herman Kiefer Hospital, with her nurse to go to the St. Clair Hotel, she was able to walk from the hospital to the street car and then walk from the street car to the hotel carrying her own suitcase. At the time Dr. Koch released Mrs. Fritts to return home to Toledo she traveled by way of interurban car without the aid of a doctor or a nurse. Her Toledo doctor did report to Dr. Koch on her progress during the recovery period.

Toledo, Ohio
July 16, 1924

My dear Dr. Koch:

I have had so many inquiries regarding your treatment for cancer from people that have heard of the wonderful cure of Mrs. Fritts that I feel it my duty not only to you but to the thousands of sufferers from this disease to publicly state just what the results of your treatment were in the case of my wife.

In July 1918, Mrs. Fritts was first taken ill; from then until June 1919, she was examined and treated by several physicians. Her case was diagnosed as appendicitis, colitis and other maladies, but she did not respond to any treatment. At the beginning of her illness she weigh 172 pounds. By June 1919, she had lost weight constantly, weighting only 97 pounds. At that time I took her to Dr. George Jones, a very prominent specialist. He and his associate, Dr. A. N. Smith, after three days examination decided to call in Dr. Louis Smead, one of our recognized surgeons. At the conclusion of their examination, Dr. Jones informed me that they were agreed that there was a growth in the abdomen, but could not say whether it was malignant or not; that the only way to determine was by operation. This operation was performed the next morning by Dr. Smead, Drs. Jones and Smith both being present. After possibly one half-hour Dr. Jones came from the operating room to where I was waiting and informed me that they had found the trouble to be cancer, and in such a shape that an attempt to remove it would undoubtedly prove fatal, consequently there was nothing to do but close the wound and keep the patient as comfortable as possible. Both Dr. Jones and Dr. Smith told me that nothing further could be done; that it was simply a case of but a few months to live. In about two weeks the wound had healed and we were able to take her home.

From then until October 1919, Dr. Smith called frequently but admitted he could do nothing for her. Early in October I heard of Dr. Koch's treatment and that he was conducting an experimental clinic in Herman Kiefer Hospital at Detroit. Accompanied by Dr. Smith, I went to Detroit and saw Dr. Andries, one of the committee appointed to watch this experimental work. We arranged to have Mrs. Fritts admitted to Herman Kiefer Hospital. A few days later we took her to Detroit, Dr. Smith and her nurse going along. Patient was in the hospital three weeks during which time she received treatment from Dr. Koch. At the time, after some disagreement, it was decided to close the hospital to Dr. Koch's patients, but as Mrs. Fritts was apparently being benefited by the treatment, I decided, if possible, to have Dr. Koch continue to treat her. I saw Dr. Koch and he told me he would continue the treatments if it was possible for her to get to his office. I made arrangements for her and her nurse to go to a hotel. From there they went to Dr. Koch's office at appointed times for two weeks. At that time she had so improved that she was able to return to Toledo (Ohio) on an Interurban car. From that time on improvement was apparent and after several visits to Dr. Koch's (Detroit) office, he pronounced her cured. Today, four years later, she is enjoying splendid health, doing all her own housework, besides enjoying all social activities, weighs one hundred and sixty pounds. A feeling of profound gratitude prompts me to make this statement.

Sincerely yours,

F. F. Fritts (Signed)

F. F. Fritts, being personally known to me, swears the foregoing is a true statement to the best of his knowledge and belief.

John H. Laycock (Signed)

Notary Public

My commission expires: Aug. 9, 1926

Four years later, on April 9, 1928, Mrs. Edythe M. Fritts executed the following affidavit. This was more than eight years since Dr. Koch first treated her in November of 1919 for cancer at Herman Kiefer Hospital and over five years since she had made a clinical recover from her cancer.

STATE OF MICHIGAN)
) SS.
County of Wayne)

On this ninth day of April, A.D., 1928 before me, a notary in and for the above County, personally appeared EDYTHE M. FRITTS, to me personally known and who being first duly sworn deposes and says that she has taken the Koch treatment, as explained in the affidavit of her husband, F. F. Fritts, and that at this date, April 9,1928, she is in splendid health and holding a weight of 160 pounds.

Edythe M. Fritts (Signed)___________

245 Glendale Avenue, Detroit, Mich.
Subscribed and sworn to before me this 9th day of April A.D. 1928

Frank J. Powers (Signed)
Notary Public, Wayne County of Michigan

My commission expires: Sep 24, 1928

Mrs. Fritts remained cancer free during the rest of her life. In the spring of 1935, as the result of an accident, she died. At the time of her death, an autopsy was performed and no trace of malignancy was found. It should be noted that Mrs. Fritts' case was also one of the official cases evaluated as part of the subsequent November 5th, 1923 investigation conducted by the Wayne County Medical Society Cancer Committee at Dr. Koch's request. This Cancer Committee refused to acknowledge Mrs. Fritts' recover from cancer at this subsequent investigation.

IN 1949 The Fort Worth Star-Telegraph reported on a two month old baby who developed cancer in 1948 which involved 85% of her liver and who was sent home to die by her doctors at the time. The article was titled:

ONCE TERMED HOPELESS CASE
Doctors Convinced That Little Judy
Overcame Cancer Ailment Herself.
With his article was a picture of Judy and her mother with the following caption.

JUDY WOWED 'EM — A rare little girl with even a more rare medical history of cancer, Judy McWhorter, shown with her mother, appeared before a cancer clinic in the Blackstone Hotel. Judy may have cured herself of cancer.

The facts of this cancer case history, treatment and cure were reported in the following signed affidavit of Mr. & Mrs. Otis McWhorter, Jr. dated June 28th 1950. Judy now lives in Texas, fifty plus years later. It is a shame that modern medicine is willing to overlook the medical research of Dr. Koch in our country.

THE McWHORTER AFFIDAVIT

TO WHOM IT MAY CONCERN:

In order to put on record the facts we know concerning the illness, treatment and recovery of our daughter, Judnith McWhorter, here in after referred to as just Judy, we make the following statement of our own will and accord, without promise of or hope of any remuneration, and having previously received no remuneration of any kind.

After a normal birth, Judy, before the age of six weeks, showed signs of illness. Her abdomen was enlarged, she was restless, and her face did not show the repose of a healthy baby.

Her physician who was a doctor in good standing, a member of the American Medical Association, and a man whom we trusted and still hold in high esteem, could not find anything wrong with her until his check up and examination at the end of her eighth week. At that time the doctor found her abdomen hard and much distended. During the period from August 20, 1948 to August 27, 1948 a tentative diagnosis of cancer was made and X-rays were given although the X-ray technician stated that it was hopeless to expect a recovery.

By the time Judy was three months old that attending physician and another surgeon made an exploratory operation on Judy's abdomen at which time a biopsy was made. The physicians reported to us that the biopsy showed a high degree of malignancy which involved 85% of the child's liver. They told us that there was nothing that could be done to save Judy's life; that we should take her home and make her as comfortable as possible for the few days that she could live.

Her life expectancy was placed at 21 days. We were told not to remove the bandage from her abdomen lest the stitches burst out. It was the doctor's opinion that the incision in her abdomen would not heal.

For some days prior to this time Mr. Joseph O. Noah, a neighbor and old friend of Mrs. McWhorter and her family, had been advocating the use of the treatment offered by Dr. William Fredrick Koch... None of us had much confidence in his treatment.

When our doctor was consulted he assured us it was useless. He said he would not give it to his own child under the same circumstances, and that it would be an unnecessary and useless infliction of pain on the patient. He also made the statement that he would believe in the treatment if he could see one case recover from the use of it where a biopsy showed positive malignancy.

It was while we were considering this treatment that Time (magazine) published its defamatory article about Doctor Koch in the issue of September 6, 1948. This article was brought to our attention by both our physician and Mr. Noah. We found it very hard to take Dr. Koch's treatment seriously in the face of such criticism. Nevertheless when we had no other hope and since Mr. Noah made it possible for us to take the treatment without immediate cost to us, we decided to try it.

Dr. Koch's therapy was given by Dr. N. T. Mulloy of Cisco, Texas. The dose was injected into Judy's hip on September 18, 1948. At this time and during the course of Judy's recovery, Mr. Noah took a series of color pictures showing her progress. Previously he had taken two pictures at six weeks of age and before diagnosis of cancer. This series of pictures gives a good idea of her case.

At the time the injection was given, Judy's abdomen was so much enlarged that she could hardly breathe due to upward pressure on her lungs. The circulation on the surface had greatly increased and she had a bluish cast from a diffusion of blood in and just under the skin. Veins under the skin of the abdomen were plainly visible. The abdomen was very firm, even hard. At the time the Koch's treatment was given, Dr. Mulloy expressed no hope of securing a recovery as he thought the case was too far advanced.

Within ten days after treatment Judy showed definite reactions, which raised our hopes. Shortly she began to pass large qualities of mucous with bowel movements. She also passed a large amount of water in the normal manner, sometimes requiring as many as twenty diaper changes per day. No medication was used after the injection of the Koch treatment and only minor changes were made in the baby's diet. Apple juice was substituted for orange juice, and Judy liked it. After treatment was given and until recovery was practically completed, only one doctor saw Judy. That was a doctor residing at Azle, Texas, who removed the stitches from the healed incision about the middle of October 1948.

During the early days of the recovery process Mrs. McWhorter reported to the doctor who had previously cared for Judy and who had advised against the Koch Treatment, that she was apparently getting better. He admonished the mother not to entertain false hopes. He said that it was impossible for a dose of any chemical to 'destroy' such a large growth.

On the other hand, Mr. Noah stated that the doctor's remarks showed that he had no conception of how the treatment was to work. He said one might as well say that a small match could not start a large fire and destroy a forest.

Soon Judy began to gain weight and her abdomen rapidly reduced in size and became more soft and pliant so that she could breathe better. The hard growth receded towards the lower right side. By December 25, 1948, she had a healthy and normal appearance as the pictures mentioned before show, but some trace of the growth remained.

Later, about May 12, 1949 I had her examined by a doctor in Paris, Texas. (Mrs. McWhorter told the doctor to make a thorough examination for trouble of any kind.) He could find nothing, after which he was told of the baby's former illness and he could still find no trouble.

On November 11, 1949 Judy and her mother appeared before a group of physicians and surgeons especially interested in cancer who met at the Blackstone Hotel in Fort Worth, Texas. While before this group, more than one doctor examined Judy and nothing was found wrong with her.

Mrs. McWhorter states that a more surprised group of doctors would be hard to find, when they first saw a rosy healthy child rolled out before them after having read a clinical summary of her case.

An account of the meeting with Judy and her mother was published in the Fort Worth Star-Telegram. The piece was headed: 'Doctors Convinced That Little Judy Overcame Cancer Ailment Herself.'

This, in spite of the fact that all concerned knew the Dr. Koch Treatment had been given and that we gave it full credit for bringing about the baby's recovery. The only excuse we can offer for this is that undue excitement might have been raised by a publication of the true facts.

On February 18, 1950 both parents and Judy attended a meeting of physicians and others at Tampa, Florida. Here Judy was again shown to a group of doctors. These were most friendly to the Koch treatment.

Judy is now past two year old. She has shown a normal growth and development, normal mental development and absolutely no abnormalities that we are aware of. She is a very active, mischievous and friendly. She has had practically no illness after taking the Dr. Koch treatment and recovering from cancer.

Witness our signatures.

Mr. O. McWhorter Jr., Father
Mrs. Otis McWhorter Jr., Mother

State of Texas . . . County of Park . . . Sworn and subscribes to before me this 28th day of June, 1950.

Jim Bob Nation
Parker County, Texas
Notary

One more example on how the medical associations are refusing to recognize the therapeutic activity of the Koch Treatment is illustrated by in the matter of Mary Lou Barnes, a 19-year-old Ohio State University student, who in 1949 was reported to have Polio. She was given the Koch Treatment according to the newspaper article titled:

CO-ED'S SWIFT RECOVERY MYSTERY EVEN TO DOCTOR

This newspaper article went on to say that the Koch Treatment was blacklisted by the American Medical Association and that the drug did not have the approval of the A.M.A. The first polio patient to be treated by Dr. Koch and Dr. Arnott was Dr. Koch's son, John, in August of 1934. Subsequently, in 1936, Dr. Koch tried to interest the Georgia Warm Springs Foundation, Inc. in his medical research. This foundation had previously been informed about the successful results that had been obtained with the Koch treatment for polio. In response to Dr. Koch's offer to give his treatment to this foundation to treat its polio patients, he received the following March 16, 1936 letter from Mr. Michael Hoke:

Let me thank you for sending me a copy of your reprint "Natural Immunity." I had heard of your investigations from other sources, especially the late Mr. Hardcastle Pennock. Work of this kind interests me very much, though, of course, it is, strictly speaking, out of my bailiwick entirely. I like to keep in touch with new things, and as you have further publications I hope you will be so kind as to let me have such references.

Though this Foundation did sponsor research and treatment for polio patients, Mr. Hoke and the administration of the Georgia Warm Springs Foundation showed no interest in Dr. Koch's research. Could this lack of interest have been due to the influence of the A.M.A.? It should be noted that the Board of Trustees of the American Medical Association had become, in 1935, an advisory committee to investigate Polio treatments and was acting in this capacity for the Georgia Warm Springs Foundation at that time of Mr. Hoke's letter.[10]

Subsequently, the local medical societies attempted to have the state medical licenses of the two doctors who had treated Judy McWhorter and Mary Lou Barnes revoked for using the Koch Treatment even though the chemical content of these medications had been established and protected by patent rights. The American Medical Association and the American Cancer Society continued to refuse to acknowledge the therapeutic activity of these medications. The Journal of the A.M.A. had a history of publishing over 20 negative editorials and articles about Dr. Koch and his treatment dating back to February 12, 1921.

In 1934 -1935, for about nine months, Dr. Koch conducted medical research using his medications with Professor Joseph Henri Maisin, Director of Cancer, Louvain University, Louvain, Belgium. The results of this research by Dr. Koch and Dr. Maisin, at Louvain University, were subsequently published in several medical research journals in Europe during the 1930's up to the start of World War II.

One of these research papers was:

The Use of Peroxide of Diformaldehyde and Organic Unsaturated Compounds in the Treatment of Anergy and Hyperergy [11]

Origin of this Research

The use of the substances discussed in this article in the treatment of anergic and hyperergic states is an outcome of extended experimental work with them in other directions.

One of us (1) has made a long study of the action of peroxides on experimental cancers, in an attempt to re-establish, with the aid of these peroxides, those oxidation processes which, as is now generally known, are defective in the malignant cell. He succeeded in obtaining definite prophylactic results against benzpyrene cancer in mice.

Having subsequently tested the action of the peroxide of diformaldehyde in a large number of desperate cases of human cancer, he was struck, from the very beginning of the work, by the remarkable influence of these products on the general health of the patient; euphoria, increase of appetite and weight, diminution of pain.

In addition, he noted coincidentally, in certain patients, a very definite influence on various infective processes as well as on such hyperergic conditions as asthma, eczema, etc., which happened to accompany the malignancy in certain of our treated individuals.

These results were of such a nature that he was prompted to inquire into the action of these products on ordinary cases of anergy and hyperergy, uncomplicated by any malignancy. The early results having been good, he then carried out, with his collaborators, a series of experimental and clinical researches. The products employed were the peroxide of diformaldehyde and certain unsaturated compounds, of which the method of preparation is given below.

Nature and Method of Preparation of the
Products used

The substances in question are of very simple chemical composition and are easy to prepare.

The first group of products comprises the organic peroxides, of which several have been used with a measure of success. We will describe here one only, the peroxide of diformaldehyde, since it has been particularly studied and is very efficacious.

"The formula of this peroxide is:

H H
H – C – O – O – C – H
HO OH

It is readily prepared by allowing a saturated solution of hydrogen peroxide in anhydrous ethyl ether to react with a saturated solution of formaldehyde in anhydrous ethyl ether,

The second group of compounds comprises certain highly unsaturated chemical substances, of which we do not know the exact formula, but which may be prepared by the action of phosphoric acid on malonic acid, or by the action of sulphuric acid on ether, or also by the action of sulphuric acid on a solution of acetaldehyde in ether. The first reaction should theoretically give as a final product, malonic anhydride, having a formula of OC=C=CO. We have reason to believe that the general formula of those active products would correspond with the structure R=C=C=R.

Dr. Maisin also pointed out the importance of using these highly active compounds in very high dilutions. He said:

These researches have shown, as did those with experimental cancer, that only very dilute solutions were efficacious. It is necessary to use the peroxide of diformaldehyde, or the unsaturated compounds in a dilution of the order of 1 x 10-9 at least. Actually, our best results have been obtained with dilutions from 1 x 10-9 to 1 x 10-18. These very high dilutions (1 x 10-18) still contain several thousand molecules per cc.

After presenting their research findings in this paper, Dr. Maisin went on discuss their research and present the conclusions they had reached from this research as follows:

Discussion

The results obtained are clear, and can be repeated easily by anyone wishing to do so. They are obtained with doses of extremely high dilution, which serves to prove that the active substance can act when exhibited in extremely small traces, as do catalysts, or enzymes. The injections have a lasting action, and do not often have to be repeated, which is an advantage from the patient's point of view. The treatment is absolutely harmless. We have given several thousand injections without the least untoward incident, except that some may have a passing malaise, due to a fall in the blood pressure. It is still too early to be able to say with certainty exactly how these substances act, but we know already with certainty that peroxide of diformaldehyde has a deep and prolonged action on the catalase of the blood.

There is no doubt that we are dealing with new phenomena, which deserve to be carefully investigated, and whose application in therapeutics appears to us to be of interest.

This work is not finished, but is leading us to believe that these two substances are not alike in their action. Finally, a curious fact which we have proved and one which we would stress, is the lengthy effect produced in a large number of cases, as well as the prophylactic action which we have proved the peroxide of diformaldehyde to have on benzpyrene cancer produced in white mice.

Conclusion

I. Peroxide of diformaldehyde and certain unsaturated compounds have a definite physiological action on the organism when only minute traces are injected.
II. Their therapeutic use is indicated since they are very effective in the treatment of various infections and hyperergic states.
III. The results obtained are better than those obtained with any other shock-producing therapeutic agents, especially from the point of view of the general health of the patient.

Investigation carried out at the Cancer Institute at Louvain. Director, J. Maisin.

"References:
W. Koch and J. Maisin: C.R. Soc. Biol. T. 120, p. 106, 1935;
J. Maisin and F. Robert: C.R. Soc. Biol. T. 123, p. 156, 1936;
J. Maisin and Y. Pourhaix: Ileme Congres Internat. De Cancerologie Bruxelles. Sept. 1936;
J. Maisin, Y. Pourbaix and P. Caeymaex: C.R. Soc. Biol., March 1938"

On September 8, 1939, while Professor Joseph Henri Maisin was on a trip to the United States just prior to the start of World War II, he wrote the following letter to the Chairman of the Ontario Royal Cancer Commission. In this letter he briefly reviewed his research over the prior five years with some of Dr. Koch's medications. In this letter he stated:

New York, September 8th, 1939
To the Honorable Judge Gillanders,
Chairman Royal Cancer Commission,
Toronto Canada

Dear Sir:

I wish to contribute to Dr. Arnott's presentation by stating that I have spent the last five years in the study and development of this treatment in allergies, infections and experimental cancer in animals.

The subject is too vast for anything like a report a this time, but I am willing to state that over this short period of five years, I have seen cancer disappear in animals and man with a return of health, as a result of its use, in real cancer proven malignant microscopically. It is, of course, too early to conclude, but sometimes the results have been so striking that we feel fully justified to continue the research in this field.

Very respectfully yours,

(Sgd.) Maisin
Director, Institute du Cancer,
Universite de Louvain, Belgium"

In 1936 Professor George R. Harrison at Massachusetts Institute of Technology did some preliminary spectrographic tests on Glyoxylide, one of Dr. Koch's medications, to make a determination of its chemical structure. In Professor Harrison's report of August 3, 1936, he stated:

A search through the absorption curves given in the Inter-national Critical Tables narrowed the possible materials down to a group of a dozen or so. One of the curves most nearly approximating that found was that of glyoxal in water.

To carry the hunt further than this spectrographically would be time-consuming and costly, since it would be necessary to mix duplicating solutions to reproduce the exact curve found. I assume that you do not require this, since it seems to me that the evidence points to the probability that the solution is what Koch says it is, or at least the equivalent.

You will appreciate that while glyoxal in water gives a curve similar to that of the ampoule material, this does not necessarily mean that the latter is this. It merely gives presumptive evidence that similar molecular bonds are present in the two materials. My conclusion is that the spectrographic analysis, as carried out so far, makes it appear very probable that the material is what Koch says it is.

Dr. Koch had identified his Glyoxylide as a polymer of ethylenedione, O=C=C=O, the most basic dicarbonyl structure known. Scientists have tried for years to isolate O=C=C=O in its monomer chemical form without success due to its high electron activity.[12] One of the known polymer forms of ethylenedione is Triquinoyl. William J. Hale, Ph.D., Research Consultant of the Dow Chemical Company and The former Director of Organic Chemical Research, in 1949, wrote about this chemical structure and showed the chemical relationship of inositol to rhodizonic acid to triquinoyl in his book Farmer Victorious, Money, Mart and Mother Earth.[13]

Dr. Hale wrote the following:

In practice triquinoyl has been found to act almost identically with 'Glyoxylide' (O:C:C:O), a compound that Dr. Koch had prepared by dehydration of glyoxylic acid (CHO-COOH). In brief, this so-called glyoxylide, which has proved so efficacious in the hands of Dr. Koch against diabetes, arthritis, poliomyelitis and even cancer, undoubtedly polymerizes under many conditions to 3(O:C:C:O) or triquinoyl, in which an oxygen atom is doubly linked to each of the six carbon atoms of the reduced (or saturated) benzene ring carbon structure, and plays a most effective role in the treatment of disease. In the likely dehydrogenation of inositol within the body we can now interpret the phenomenal action of inositol in replacing insulin for diabetics.

Now the role of these polyketocompounds is definitely oxidative. By their presence a higher level of metabolism is made possible in the system, and, like a passing wave over a golden wheat field, this wave of oxidative influence continues unabated for months upon months-sufficient, indeed, to heal improperly nourished organs and slough off decadent tissues. All of this is in accordance with findings of H. Wieland proving first the hydration of an active carbonyl group in body fluids into $:C:(OH)_2$ and its subsequent dehydrogenation by enzymes into a peroxide type, :C:O:O, whereupon nascent oxygen is liberated and the carbonyl group (:C:O) regenerated to repeat the process. Just as Pasteur identified the microscopic organisms that led to plant disease, so Koch identifies the chemical agents that are capable of combating microorganisms.

Dr. Albert Szent-Gyorgyi, in his 1963 paper Cancer Therapy: A Possible New Approach,[14] identified a substance he called "Retine", a methyl glyoxal derivative, that would inhibited cancer cell growth and "Promine", a substance, which makes cancer cells grow faster. In this paper he suggested that both Retine and Promine were of small molecular weight and of high potency and that they control normal cell division. The actual chemical structure of Retine had not been determined.[15] He also wrote in 1963 that in animal experiments with retine, daily injections of retine produced no observable toxic effect.[15] In 1967, Dr. Szent-Gyorgyi made further reference to glyoxal derivatives as having anti-viral activity.[16] He wrote:

The glyoxal derivatives also have antiviral properties and may be in the center of a hitherto unknown system of equilibria which deserves a thorough study. The low molecular weight of the glyoxal derivatives reported justifies the hope of an early clarification of its structures, as well as its synthesis.

In 1968, Dr. Szent-Gyorgyi wrote about the cancerostatic action of methylglyoxal.[17]

"We found that cancer cells in tissue cultures were more sensitive to methylglyoxal than normal ones were, a finding of possible significance for cancer therapy." and, "Our experiments show that mice inoculated intraperitoneally with sarcoma 180 can be cured by intraperitoneal injections of methylglyoxal."

In his paper Bioelectronics – Intermolecular electron transfer may play a major role in biological regulation, defense, and cancer [18] Dr. Szent-Gyorgyi wrote:

The simplest alpha-keto-aldehyde is methylglyoxal (pyruvic aldehyde); this fact seemed most exciting because, as far as we know, all cells contain a very powerful enzymatic system for the conversion of alpha-keto-aldehydes into the corresponding unreactive oxyacids – for converting, for instance, methylglyoxal into lactic acid. This enzymatic system, called the 'glyoxalase,' occupied the attention of several of the most outstanding biochemists in the first half of this century, but the interest later faded out, for no glyoxal derivative could be found on the main metabolic pathways, nor could such a substance be isolated from tissues under normal conditions. And what is the use of an enzyme without a substrate?

Should the inhibitor of growth prove to be a dicarbonyl, like methylglyoxal or a compound thereof, then I had an excuse for not having been able to isolate it, for the isolation of the expected trace amounts of such a very reactive substance would be very difficult indeed.

Dr. Szent-Gyorgyi concludes his paper with this paragraph:

A Tentative New Theory of Cancer: One could ask what would happen if a cell lost its ability to bind its own glyoxalase? Then it would have to go on multiplying senselessly and endlessly, behaving like a cancer cell. As far as we know, the only difference between a normal cell and a cancer cell is the fact that the latter divides when no proliferation is needed. All this leads, tentatively, to a new theory of cancer: a cancer cell is a cell which has lost its ability to bind its own glyoxalase. Whether this theory is right or wrong remains to be demonstrated. It recommends itself by its clarity, its simplicity, and its ability to explain why such a great variety of noxious influences can lead to the same end, cancer. The theory also has the earmark of a good theory: it can be proved or disproved. What may lend it additional value is the fact that it suggests various ways of seeking a therapy for cancer. It is regrettable that, owing to cuts in the budget, this research will have to be discontinued….[19]

In 1972, Dr. Szent-Gyorgyi was interviewed by Jane Kinderlehrer for Prevention Magazine.[20] In her article she wrote about Dr. Szent-Gyorgyi scientific research with the natural non-toxic substance (Retine) he had discovered in the 1960's that had the ability to retard neoplastic cell division and cell growth. He had estimated, at that time, that a $200,000 grant from the National Cancer Institute, Bethesda, Maryland, would allow him time to come up very close to an actual cure for cancer. This small grant, Dr. Szent-Gyorgyi never was able to get even though the United States government was spending yearly hundreds of millions of dollars on basic cancer research. In this article Dr. Szent-Gyorgyi also made a brief reference to the research of Otto Warburg, Ph.D., M.D., N.L. and Warburg's theory of anaerobiosis, the ability of animal cells to live without oxygen, as being the prime cause of cancer. Dr. Warburg was of the opinion that anaerobiosis met the demands of Pasteur as the prime cause of cancer.

In his 1973 Dr. Szent-Gyorgyi wrote a complete review of his biological and cancer research over the years.[21] He pointed out the importance of the biological function of the two enzyme systems in which involved glyoxalase I and II and of the coenzyme, SH-glutathione and the transformation of glyoxal derivatives into the corresponding hydroxyacids and methylglyoxal into lactic acid.[22] He explains the importance of C = O, the "carbonyl group", and O = C – C = O, the "di-carbonyl group", the simplest being glyoxal. He identifies "retine" as the substance that keeps cells at rest, the "off" switch to cell division, and "glyoxalase" as the "on switch" which bring about uncontrolled cell division. It is glyoxalase that changed the reactive, dicarbonyl, glyoxal derivatives into the corresponding inactive hydroxy-acids. He wrote:

If "retine" is glyoxal or a glyoxal derivative; then the enzyme which starts proliferation could be the glyoxalase which transforms the carbonyls into inactive hydroxyacids. As shown by L. Egyud, animal cells do contain glyoxal and methylglyoxal. They contain also glyoxalase so when no proliferation is needed, these two, glyoxalase and the glyoxal derivatives must be kept separated, and damage could induce proliferation by creating disorder and letting them meet. This could explain the biological role of glyoxalase which has been a mystery. (p 554-5)

On page 560, Dr. Szent-Gyorgyi made a reference to Dr. Koch's book The Survival Factor in Neoplastic and Viral Disease, An Introduction to Carbonyl and Free Radical Therapy, 1961 and Dr. Koch's emphasizes on the importance of the carbonyls to cancer control.

Albert Szent-Gyorgyi, Ph.D., M.D., N.L., in 1975, wrote the following in his paper The Search For A Natural Cure For Cancer. In this paper he has summarized his theories on the basic cause and treatment of cancer. His research has been a very constructive approach to solving the cancer problem and the bases for establishing an effective form of treatment for cancer.

There is a great need for a drug which cures or prevents cancer without harming the patient. Such an action can be expected only from a natural substance. I have to explain what I mean by "natural".

The cell is an exceedingly complicated and subtle machinery in which all functions are carefully regulated. A normal cell divides only when division is needed. A cancer cell divides also when no division is needed. The regulators are out of order. All efforts to show the difference between the chemical makeup of a normal and a cancer cell have hitherto failed. The cellular structures are identical, only the regulators are disturbed. Something has gone wrong that has to be repaired.

In order to be able to repair any mechanism, we must know how it is built and how it works. We can control only what we understand. To be able to repair, we must find out what has gone wrong, which screw is missing or which bolt has loosened. To replace the new part which takes over the function of the old one, is what I call a "natural cure." Only by replacing the failing part, can we expect a real cure which does not damage the host. Putting in all sorts of substances which we take from the shelf, or synthesize are not 'natural,' even if taken from some plants. The same holds for high-energy radiation. All these artificial therapeutic agents interfere with some basic function on which both the cancer and the normal host cell depend. They have thus to damage both.

For years my laboratory has worked in silence to find out how the living cell regulates its proliferation. We have arrived at a fairly clear concept and hope to be able to identify soon the part which is not working properly. In my opinion, this is the only hopeful approach. It is not an easy one because the living machinery is very complex and subtle. This is not a new approach either. It is the oldest approach but it is not a sensational one and so it is very difficult to find support for it. The National Institutes of Health, the main granting agency for biomedical research, rejected my application thrice. I had no luck with the cancer society either. Everybody wants a quick cure, but there are no shortcuts to basic research. There are shortcuts only to failure.

…Oxygen makes oxidation, burning possible, and oxidation produces energy. Warburg, the great German biochemist, made energy responsible for the development. But energy cannot transform, build machines, it can only drive them. But if it was not energy which provoked the development, then it had to be oxygen itself which made the difference. "Oxidation" in scientific language means taking 'electrons,' electric particles from oxidized material. All matter is built of atomic nuclei and electrons. Taking electrons from a substance means oxidizing it. The oxygen of the air does not take electrons from the living protein, but there are atomic groups, called carbonyls, which contain oxygen which can take single electrons from protein, bringing the proteins hereby into a more reactive form, called "free radical." The transformed proteins have very special properties, like electric conductivity. It is here in the electronic dimension that something is out of order in cancer. Carbonyls arrest cell division and my laboratory was led to the conclusion that it is still the carbonyls which arrest cell proliferation and it is the carbonyl which make the cell return to the resting state, after it completed division. If the carbonyls are missing, proliferation has to go on, and cancer results. We were not the first to be led to such a conclusion. A decade ago a very intuitive researcher, W. F. Koch, came to the same conclusion. Unfortunately, he did not leave us enough information to enable us to follow his trail.

By having carbonyls as regulating agents, the problem is by no means solved. We have to find out how the carbonyl fits into the regulation, how it is produced, destroyed and how it acts. There is still a long way to go, but I am very confident that this is the right way and the end is not too far.

In 1979, Dr. P. Garber contacted Dr. Szent-Georgyi in regards to Dr. Koch's cancer research and he had suggested that Dr. Szent-Georgyi meet with a representative of the Koch family in order that he (Dr. Szent-Georgyi) might learn more about Dr. Koch's research and theories on cancer. Dr. Szent-Gyorgyi's wrote the following reply letter of November 1, 1979 to Dr. Garber.

I can tell you, I have a great admiration for Koch. He must have been a very outstanding man. My feeling is that he had a strong intuitive feeling about the role of C=O group and especially its conjugated form as C=OC=O as one of the great regulating forces in nature. It is very unfortunate that he never expressed this clearly and definitely in any (of) his writings known to me. I have been working myself on these lines now for years and the subject has made very great progress and it is doubtful whether the notes of Dr. Koch could help any further.

I would not like to become involved in the controversy around his name and, maybe, reproached later that I am led in my studies by the posthumous notes which the Koch family could put at my disposal. I also doubt whether I could find the time for their study they undoubtedly deserve. I would not like either to revive the controversy around his name. That he has met by hostility is not doubtful for me. I know it from my own experience that people with intuition are regarded as an enemy by those who have none.

In a letter from Willard H. Dow, President of Dow Chemical Company, dated June 21, 1946, to Mr. Laurence B. Thatcher, Dr. Dow wrote the following on how Dow Chemical Company became interested in Dr. Koch's research:

You may be interested to know, however, how we began to be interested in this method of treatment. Some years ago we decided it was up to us to apply ourselves to the chemistry of such diseases as influenza, and find out all we could. During the analysis of the problem entirely from a chemical standpoint, and not from a medical standpoint, we arrived at the conclusion that some medicinal of high oxidizing characteristics should be the method of medical cure. About that same time one of our people here discovered Dr. Koch's activity and found that his chemistry as applied to medical treatment was exactly the thing we were interested in. We proceeded to follow all his problems, and as a result of his observation of our interest, he began to concentrate a great deal of his attention in this neighborhood.

His recent trial in connection with the Pure Food and Drug Administration has brought him the support of some of our technical people on the basis of submitting technical information that is available here and has been proved up and which the government had attempted to misrepresent. Our intention all the way through has been to try to get at the truth of this whole matter, and whether it is Dr. Koch or somebody else, we would take the same attitude to try to prevent an innocent man from being crucified. We cannot understand what the Food and Drug Administration is driving at for the reason that all our information to date would indicate Dr. Koch has been exonerated from illegal practices as far as the Administration is concerned, and as for the mislabeling of packages, like everyone else it is merely a matter of interpretation rather than willful violation of the law. Before the present trial came up, Dr. Koch had appeared before the Washington representatives of this department and thought the whole matter was straightened out to their satisfaction, but apparently not so. It is strange, because the same procedure is run into time and time again by industry when it is necessary to get a label properly approved before it goes to the public, but in his case it does not seem to be possible without a trial. He has had no trouble in proving his points, but the government has spent a tremendous amount of money to try to prove he is wrong. It almost sounds as if a certain group is attempting to persecute him unjustly.

…As far as I am personally concerned, I consider him one of the outstanding scientist in the medical profession, and he is so far head of the thinking of his profession that he is naturally being ridiculed somewhat….The mere fact that Dr. Koch has a treatment definitely affecting virus diseases is of itself sufficiently important that it ought to be analyzed from every angle by the medical profession….I think we all have an opportunity to see something new aborning in Dr. Koch's work….I sincerely hope some day the public will recognize him for his ability.

From 1919, when Dr. Koch's cancer research was first published in the Detroit Medical Journal,[23] until today, the millions of persons who have suffered and died from cancer and its allied diseases, could have had an alternative form of treatment available to them for their conditions had only the medical profession in the United States been willing to recognized and used his method of medical treatment. It should be remembered, once again, what Dr. Alexander W. Blain, oncologist, said in 1919 about Dr. Koch's cancer research.[24]

Dr. Koch is one of the most brilliant physiological chemists in the country...what he has done is this: "He has made people well who were so far gone with cancer that they had only a few weeks to live. Several patients he treated for me are working hard and enjoying life a year after they should have been dead...I believe—even if he has not discovered an absolute cure for cancer, he has added years to the lives of cancer victims….What he has already done is a boon to humanity and a great step forward in physiological chemistry."

And Dr. Walter L. Hackett said:

There is no question of Dr. Koch's sincerity and ability…. I have enough confidence in his treatment to let him inject his serum into any cancer patient of mine. I had, as a patient, an old woman who was very far gone. At Koch's suggestion, I operated on her and took out such cancerous growths as were apparent. Later, the cancer grew again. Dr. Koch gave her four injections and she is now apparently entirely well. I have seen some excellent work done with radium, but never anything so remarkable as this. Dr. Koch should be given every opportunity to prove the value of his treatment.

And Dr. C. Hollister Judd, President of the Medical Board, Women's Hospital said:

When we stop to consider that one woman in every seven and one man in every 12 have cancer, the importance of the work Dr. Koch is doing can not be overrated, though it is too early to say that he has a cure for cancer. He has been working under many handicaps. The cases given him have been the 'hopeless' ones, where the surgeons saw the uselessness or impossibility of further operation, and his treatment has shown remarkable results.

And Dr. J. H. Carstens said:

He has apparently effected some wonderful cures, but it is too soon to say this positively. I am against publicity in the matter, as we do not want persons afflicted with cancer to flock to Detroit for treatment when they will not be able to be taken care of. Dr. Koch will get all the cases he needs.

And Dr. G. H. Palmerlee said:

Dr. Koch treated an old man for me. The growth seems to have reduced materially and the patient began feeling better after the first few treatments. It is too early to say that Dr. Koch has a cure for cancer. He should be given a ward in a hospital with a number of cases proved beyond the shadow of a doubt to be cancer. Then a commission of physicians should be appointed to watch the effect of Dr. Koch's treatments on the patients. If he had 100 cases of positively proved cancer and he established cures in 90 per cent of the cases,[25] he would be getting somewhere.

If he can cure 75 per cent of his cases – even if he has not a positive cure for all cancer – his discovery is a boon to humanity, for the man who discovers a cancer cure will be the greatest man in the world. One of the difficulties of curing cancer is that ordinarily it is not discovered until the case is too far advanced to be operated. Operations are successful if the cancer is caught early enough and if all the cancer cells are removed. If, however, a few of the cells escape and spread through the lymph tracts or blood vessels to other parts of the body, the cancer will break out again and it is obvious that only a certain amount of tissue can be removed from the body.

At the time Dr. Koch said:

The establishing of a commission of physicians to study the progress of the cases he treats is exactly what he wants...I do not want to make the formula public just yet because I fear it might be commercialized. The compound is difficult to make and it deteriorates rapidly. If I published it and quacks or unscientific men started mixing it and treating cancer with it, the results would be disastrous, not only possibly to the patients, but to the ultimate success of the treatment. Improperly mixed or administered the compound would fail to do its work. It would be discredited by the medical profession and it would take years to establish its value. When I have proved to the satisfaction of the medical world that it dose its work, it will be time enough to make the formula public."

CONCLUSION

Unfortunately for the general health of all Americans, Dr. Koch was never given the research facilities and cooperation by the medical profession he had asked for and wanted. Thus it became necessary for him for him to go to other countries and universities to teach his scientific medical research. The denunciation of Dr. Koch's medical research, along with his form of treatment for cancer and its allied diseases, which has been perpetuated by our Governmental agencies and the American medical profession over many years has proven to be a detriment to the general health of the American public. The Koch Family

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[1] Upon graduation from High School in Detroit, Michigan, William F. Koch was the winner of the National Scholarship for Chicago University, Chicago, Illinois.

[2] The Koch Cancer Treatment, Bulletin of the Koch Cancer Foundation, October 1926, p. 3.

Please note that the emphasis and underlining used herein are those of the author of this article.

[3] Detroit Medical Journal, July 1919, Vol. No. 7, p 244-248. A more complete paper on this early research by Dr. Koch was published in the Medical Record, Oct. 30, 1920.

[4] This was the beginning of the attempted take over and control of Dr. Koch's cancer research and treatment by some members of the local medical society.

[5] The accepted five-year period for proof of a "cure" of these cancer patients that had been treated by Dr. Koch had not passed at the time of this report. However, these treated "terminal cancer patients" appeared to be "clinically recovered" according to their personal treating doctors at that time.

[6] This was the department for the City of Detroit that had complete financial control over the Detroit College of Medicine and Surgery at that time.

[7] The Wayne County Medical Society Weekly Bulletin, Jan. 5, 1920, pp. 4-6

[8] Note that Dr. Koch refers to his treatment as a "cancer treatment", not a "cancer cure"; it was the Wayne County Medical Society refers to this treatment as a "cancer cure".

[9] Printed in the September 1925, issue of the Journal New Orleans Medical and Surgical Society Orleans, pp 169 – 174.

[10] A History of the American Medical Association 1847 to 1947, Morris Fishbein, M. D., p 422

[11] THE MEDICAL PRESS AND CIRCULAR, September 7, 1938, Vol. CXCVII, NO. 5183

[12] Experiments aimed at generating the long-sought-after ethylenedione (O=C=C=O) by neutralization-reionization mass spectrometry, Detlev Sulzle, et al, International Journal of Mass Spectrometry and Ion Processes 125 (1993), pp. 75-79.

[13] Farmer Victorious, Money, Mart and Mother Earth, Coward-McCann, Inc., N.Y., 1949, Chapter XVIII – Chemotheraphy, pp 159-161.

[14] "Cancer Therapy": A Possible New Approach, Science Vol. 140, p. 1391, June 28 1963.

[15] Preparation of Retine from Human Urine, Science Vol. 142, p. 1571, Dec. 20, 1963.

[16] "Keto-Aldehydes and Cell Division", Glyoxal derivatives may be regulators of cell division and open a new approach to cancer, Science, Vol. 153, Feb. 3, 1967.

[17] "Cancerostatic Action of Methylglyoxal, Science, Vol. 160, p.1140, June 7, 1968.

[18] "Bioelectronics, Intermolecular electron transfer may play a major role in biological regulation, defense, and cancer, Science, Vol. 161, Sept. 6, 1968,

[19] The Federal Government has on many occasions denied research funds to Dr. Szent-Gyorgyi over the years, thus denying him the opportunity to carry on this very important basic medical research to find a "cure" for cancer.

[20] Liver May Hold The Secret of Cancer Prevention, Jane Kinderlehrer, Prevention, pp 124-131, Nov. 1972.

[21] Bioelectronics and Cancer, Bioenergetics, 4, pp 533-562, 1973.

[22] Dr. Koch, in his early research, had observed that the urine of the animals without parathyroid glands carried large amounts of lactic acid. See page 2.

[23] A New and Successful Treatment and Diagnosis of Cancer, Detroit Medical Journal, Vol. XX, No. 7, pp. 244-248, July 1919.

[24] "Reports New Cancer Serum., Professor at Detroit College Stirs Medical Profession by Announcement." The Detroit News, Sunday September 7, 1919.

[25] On January 29, 1943, Dr. Francis Carter Woods (Director of the Cancer-Research Laboratory at St. Luke's Hospital, New York City and former pathologist at Columbia University) testified in Federal Court in Detroit, Michigan, that:

The cure rate for breast cancer was 35 percent; intestine cancer was 25 percent; and that death resulted in all but a small percentage of brain, stomach and lung cancers. He also stated that about 95 percent of all well established cancers prove fatal. Detroit Times, January 29, 1943.

In September of 1926, Dr. Isaac Levin, Director of the New York City Cancer Institute and Professor of Cancer Research, N. Y. University Medical School at Lake Mohonk, N.Y. said:

Medical School at Lake Mohonk, N.Y. said:

I want to say that the public as well as the profession must realize that even 30 percent of success, which was mentioned today, is after all not a hope-less situation.

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